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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Christopher W. Blomquist

In re U.S. Patent No.: 11,740,020

Ex Parte Reexam No.:(New)

Filing Date: Herewith

Docket No.: 167536.00001

For: Unidirectional multi-path lumber kilns

Applicant/Assignee: USNR, LLC

MAIL STOP: Ex Parte Reexam

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REQUEST FOR EX PARTE REEXAMINATION

I. REEXAMINATION REQUEST

Pursuant to 35 U.S.C. §§ 302-307 and 37 C.F.R. § 1.510, Requestor seeks reexamination of Claims 1-15 (“Challenged Claims”) of United States Patent No. 11,740,020 (“’020 Patent”), which issued on August 29, 2023 to Christopher W. Blomquist and matured from U.S. Application No. 17/222,865 (“’020 Patent Application”). The ’020 Patent claims priority to U.S. Provisional Patent Application No. 61/802,196 filed on March 15, 2013.

Requestor seeks reexamination of the Challenged Claims on the basis of:

- a) U.S. Patent No. 7,146,747 to William Paul Studd, et al, filed September 25, 2001, issued December 12, 2006 (“Studd”), and which is thus prior art to the ’020 Patent under pre-AIA 35 U.S.C. § 102(b);
- b) U.S. Patent No. 2,288,154 to James Forrest Cobb, filed January 10, 1938, issued June 30, 1942 (“Cobb”), and which is thus prior art to the ’020 Patent under pre-AIA 35 U.S.C. §

102(b); and

c) The “Hildebrand Progressive Kiln” article (also referred to herein as “Hildebrand Progressive Kiln reference,” “Hildebrand reference,” or “Hildebrand”) published on the website of lumber kiln manufacturer Hildebrand-Brunner and which was published on the website no later than April 19, 2008 as shown at <https://web.archive.org/web/20080419092216/http://www.brunner-hildebrand.com/kanaltrockner.php>, and which is thus prior art to the ’020 Patent under pre-AIA 35 U.S.C. § 102(b).

As required by 37 C.F.R. § 1.510(b)(1), this Request presents Substantial New Questions of Patentability as to the Challenged Claims in view of Studd, Cobb, and the Hildebrand Progressive Kiln reference (collectively the “Asserted Art”). A detailed explanation of the pertinence and manner of applying the Asserted Art to the Challenged Claims for which reexamination is requested is also included in this request, as required by 37 C.F.R. § 1.510(b)(2). Specifically, each item or combination of items of the Asserted Art presented herein not only raises a Substantial New Question of Patentability, but renders the Challenged Claims invalid as follows:

1. Claims 1-15 of the ’020 Patent are invalid as anticipated under pre-AIA 35 U.S.C. § 102 based on Studd;
2. Claims 1-15 of the ’020 Patent are invalid as obvious under pre-AIA 35 U.S.C. § 103 based on Studd in view of Cobb; and
3. Claims 1-15 of the ’020 Patent are invalid as obvious under pre-AIA 35 U.S.C. 103 § based on Studd in view of the Hildebrand Progressive Kiln reference.

Accordingly, Requestor respectfully requests that the Director order reexamination of the Challenged Claims under 37 C.F.R. § 1.525(a).

II. CONCURRENT LITIGATION

The '020 Patent is presently being asserted by the assignee, USNR, LLC, against American Wood Dryers, LLC in litigation pending in the United States District Court for the District of Oregon, Portland Division, Case No. 3:24-cv-00865 ("Concurrent Litigation"), which was filed on May 29, 2024.

III. OVERVIEW OF THE '020 PATENT AND PROSECUTION HISTORY

A. Background Of The Invention

The Background section of the '020 Patent begins by describing a well-known process referred to in the lumber drying industry as "batch" drying which relies on use of an insulated chamber or "batch" kiln. Specifically, the '020 Patent states that it was known at the time of the '020 Patent that:

Green lumber is typically stacked, grouped in batches, and dried batch-wise in a kiln. The batches of lumber ("charges") are placed within an insulated chamber in the kiln, and the chamber is closed. Conditions within the chamber (e.g., air temperature, air flow direction/speed, and humidity) are set according to predetermined parameters, which may vary according to various factors [] The lumber is dried within the chamber for a predetermined length of time or to a predetermined moisture content. [] The insulated chamber is then opened to remove the dried lumber and to insert the next batch of green lumber.

'020 Patent, 1:32-45. Indeed, such batch kilns were known long before the '020 Patent. *See, e.g.*, "Types of Lumber Dry Kilns," U.S. Department of Agriculture Forest Service (May 1950), at 1.

Not only was "batch" kiln lumber drying well-known, the '020 Patent acknowledges that "continuous" or "progressive" lumber drying kilns were also common in the prior art. In such kilns, the lumber charges move continuously through one or more chambers at rates which are either pre-determined or controlled by human or computer based on various conditions monitored

within the kiln. The concept of using “continuous” or “progressive” kilns has been known and used for many decades and is addressed in further detail below.

Indeed, the ’020 Patent explicitly recognized that “continuous kilns” were known, deployed, and used within the forestry and lumber drying industry, and thus such kilns were known to have multiple (and parallel) paths extending through multiple zones or chambers:

Some mills have begun to dry lumber in continuous kilns. Conventional continuous kilns include a central heating zone with a preheating zone at the proximal end and a cooling zone at the distal end. The preheating and cooling zones are typically of equal length, and are typically 70 to 100% of the length of the central heating zone.

Two parallel paths extend through the three zones, and lumber charges are conveyed through the kiln along one path or the other.

’020 Patent, 3:1-14 (emphasis added). Thus, the ’020 Patent recognized as prior art multi-path, multi-zone kilns in which lumber charges progressively move from one end of the kiln to the other.

After admitting the prior art existence and use of multi-path continuous kilns, the ’020 Patent discusses U.S. Patent No. 7,963,048 (“Pollard ’048”) as a prior art example of a dual parallel path continuous kiln in which the lumber charges on each respective parallel track enter the kiln at an “entry portal” of the kiln, move in the opposite direction of lumber charges on the other track, and exit the kiln at an “exit portal” of the kiln. ’020 Patent, 3:15-29.

The ’020 Patent also incorporates by reference and discusses U.S. Patent No. 8,201,501 (“Pollard ’501”) as prior art that discloses a transport assembly “configured to travel along a track that includes two parallel rails and a chain extending between the rails.” ’020 Patent, 5:43-48. Also, Pollard ’048 expressly discloses the use of “baffles” (or walls or partitions) between the chambers/zones/sections of the kiln. Pollard ’048, 3:23-27 (“In one embodiment of the present invention, baffles or other partitions, as indicated in broken lines 28 in FIG. 2, may be used to not only divide the kiln heat Zone from the preheat/conditioning zones, but to also further divide the

interiors of the zones themselves.”).

In addition, both Pollard '048 and Pollard '501 disclose the use of fans to circulate heated air to effectuate desired drying. Pollard '048, 3:45-47 (“In one embodiment, different horsepower/sized fans may be used in different Zones or sub-zones to controllably vary the rate of air flow across the lumber charges.”); Pollard '501, 2:29-32 (“heat transfer between the paths will take place aided typically by fans positioned to transfer heat between the passing loads of lumber as they are moved past one another”).

Putting aside for now Requestor’s later below discussion of such “opposite” or “counter-flow” flow paths vis-à-vis “unidirectional” or same direction flows, the ’020 Patent’s own “Background” description and subsequent reference to, incorporation, and characterizations of the prior art as referred to above make it clear that kilns with the following elements were already known:

- multiple chambers (*e.g.*, preheating zone, heating zone, cooling zone) through which lumber continuously or progressively flows as part of the lumber drying process; and
- multiple parallel tracks for lumber charges to flow from one end of the kiln to the other end.

Id. at 3:1-14.

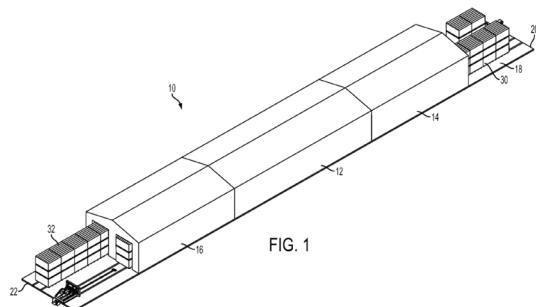
In view of the above, there should be no dispute that the following aspects of, for example, independent claim 1 of the ’020 Patent **were known** in the prior art and not invented by the patentee:

- elongated enclosure with opposite ends and having a longitudinal axis extending through said ends
- first and second sections (or chambers) in elongated enclosure

- entry and exit charge portals at ends of elongated enclosure
- guide members defining multiple flow paths on opposite sides of longitudinal axis
- a heat source to heat the second (or heating) section
- fans to circulate heated air among sections
- using a transport system to progressively advance lumber charges through the first and second sections along the multiple flow paths

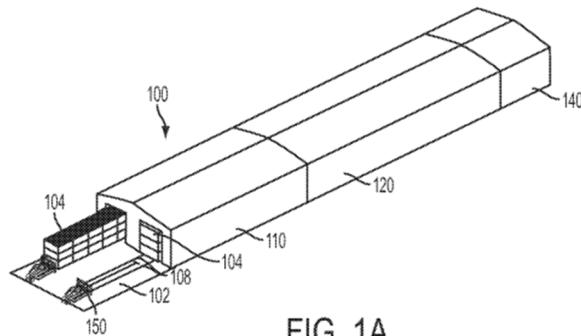
As further demonstration of the '020 Patent's invalidating prior art admissions, the '020 Patent describes its purported invention using a figure of a kiln ('020 Patent, FIG. 1A below) largely mirroring what is conceded in the '020 Patent as being prior art (Pollard '501, FIG. 1 below):

Pollard '501 filed in September 2009



(incorporated by reference in '020 Patent at 5:43-47)

'020 Patent filed in March 2013



Thus, the '020 Patent patentee conceded that the physical elements of its purported invention had been known for years—both in the physical description and by incorporating by reference the prior art Pollard '048 and '501 Patents—but relied on “unidirectional” flow as opposed to “counter-flow” configurations in attempt to distinguish such prior art. For example, in the Technical Field section of the '020 Patent, the patentee stated that “[e]mbodiments herein relate to the field of lumber drying, and, more specifically, to methods and systems for drying wood products in a kiln with at least two generally parallel flow paths along which charges are moved through the kiln in substantially the same direction of travel.” '020 Patent, 1:24-28 (emphasis added).

B. The '020 Patent Application

The application leading to the issuance of the '020 Patent was filed on April 5, 2021 with 22 claims and claimed priority back to a provisional application filed on March 15, 2013.

On April 11, 2022, the Office issued a Non-Final Rejection of all claims including claims 1-11 based on indefiniteness under 35 U.S.C. § 112 as well as claims 1-22 based on double patenting under 35 U.S.C. § 101 based on U.S. Patent No. 8,875,782 (which was presumably a typographical error intended to reference U.S. Patent No. 8,875,414 to USNR).

On August 11, 2022, the applicant filed an Amendment cancelling original claims 1-22 and adding new claims 23 to 44.

On September 19, 2022, the Office issued a Final Rejection of all claims including claims 23-42 based on indefiniteness under 35 U.S.C. § 112 (presumably this was another typographical error rejecting claims 23-44).

On March 20, 2023, the applicant further amended the claims to overcome the indefiniteness rejections.

C. The Office Allowed The Claims With Cursory Explanation

In its April 17, 2023 Notice of Allowance, the Office allowed claims 23-44 without any meaningful discussion of any prior art references and without any previous rejections based on any prior art materials. *See April 17, 2023 Notice of Allowance.* There was no substantive rejection of the claims during examination nor does it appear that the examiner reviewed any of the Asserted Art identified and relied upon herein during examination of the '020 Patent Application. The April 17, 2023 Notice of Allowance did not provide any reasons for allowance.

IV. PATENTS AND PRINTED PUBLICATIONS RELIED UPON OR REFERRED TO

Exhibit 1: '020 Patent

Exhibit 2: Studd

Exhibit 3: Cobb

Exhibit 4: Hildebrand Progressive Kiln Reference

Exhibit 5: "Types of Lumber Dry Kilns," U.S. Department of Agriculture Forest Service (May 1950) (highlighting added)

Exhibit 6: Pollard '048

Exhibit 7: Pollard '501

Exhibit 8: <https://www.usnr.com/en/content/hist-irvingtonmoore>

Further, each patent or printed publication relied upon above or referred to herein to establish the existence of a Substantial New Question of Patentability is discussed in detail in one of the following appendices. Further, each patent and printed publication set forth below or discussed in the appendices has also been either provided or cited on the attached modified Form PTO/SB/42.

Appendix A: Studd; Studd in view of Cobb

Appendix B: Studd in view of Hildebrand Progressive Kiln reference

V. DISCUSSION OF THE ART AND SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

A. Claim Limitations

During *ex parte* reexamination, as during original prosecution, the “claims are given the broadest reasonable interpretation consistent with the specification and limitations in the specification are not read into the claims.” *In re Yamamoto*, 740 F.2d 1569 (Fed. Cir. 1984); MPEP § 2258. All contentions included herein regarding the scope of the claims are believed to be consistent with the broadest reasonable interpretation (“BRI”) for the reasons provided.

B. Studd

Studd was filed with the USPTO on February 26, 2004, claims priority to a PCT application filed on September 25, 2001, and issued on December 12, 2006. As detailed more fully in the claim chart attached as Appendix A, Studd—***which was not considered*** by the Examiner during the examination of the ’020 Patent Application—explicitly discloses every limitation of the Challenged Claims.

Entitled “Timber Drying Kiln,” Studd discloses:

A multichamber timber drying kiln in which different conditions are maintained in each chamber and methods of drying timber using such a kiln. In one aspect timber is rapidly heated within a first chamber (**2; 202; 207**) and then transferred to a further chamber (**3; 203; 208**) for further drying. Timber may be transferred from the first chamber (**2; 202; 207**) when the moisture content of the timber approaches the fibre saturation point[.] A preheating chamber (**1; 201; 206**) may be provided to preheat the timber before passing to the first chamber (**2; 202; 207**). A conditioning chamber (**4; 204; 209**) may be provided after the further chamber (**3; 203; 208**) to condition the timber.

Studd, Abstract (bolded references to figure elements in original).

Studd discloses that the kiln contains various “tracks” from the proximal end to the distal

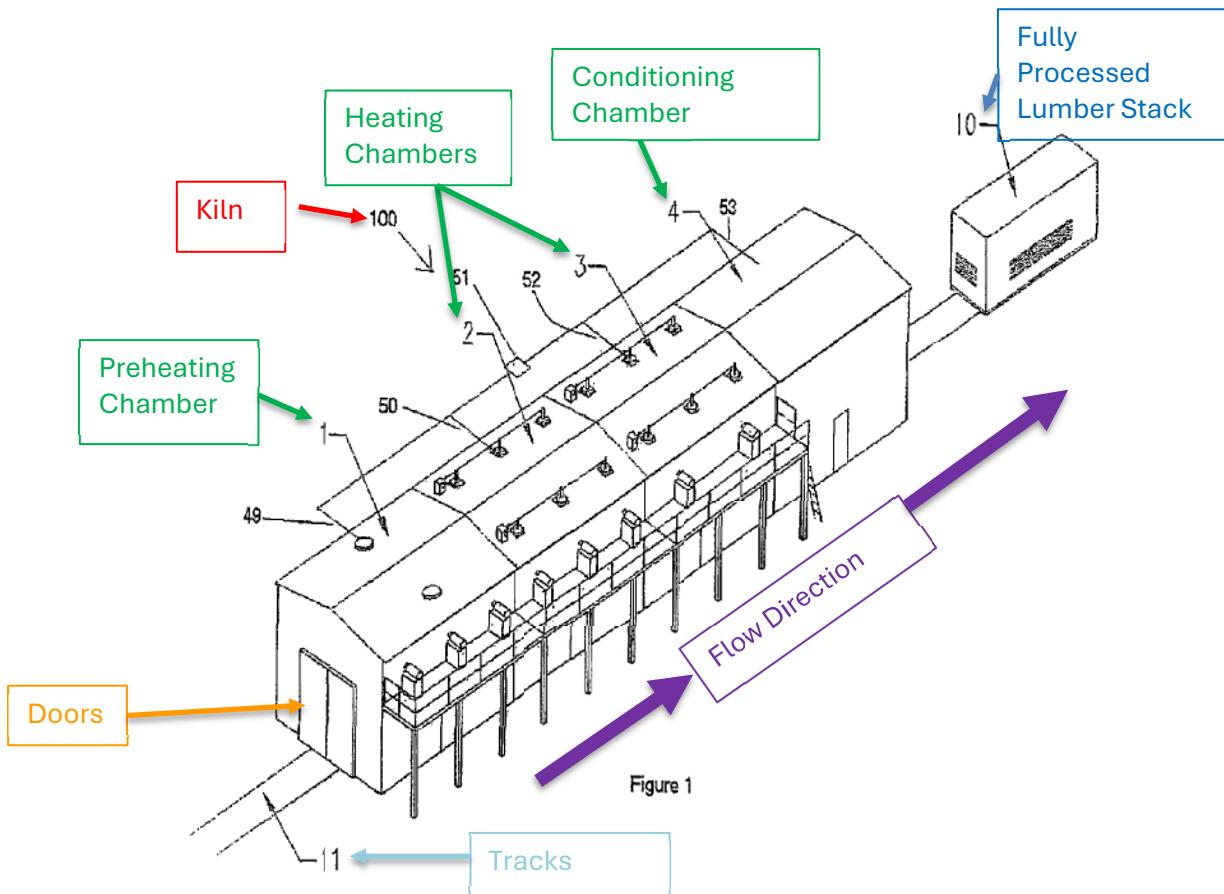
end of the kiln's structure by which tracks stacks of lumber are conveyed through the various chambers. *See, e.g.*, Studd at 4:56-61 ("Stacks of timber **5** to **9** may be stacked upon trolleys which run along tracks 11 through the kiln. The trolleys may be advanced through the kiln under the control of PLC **21**. The doors are well insulated to allow substantially independent control of conditions within respective chambers.") (emphasis added). Studd also discloses that:

[B]atches of timber may move successively through the kiln spending different amounts of time in each chamber. For example, several independently moveable stacks of timber may be located within each chamber and moved independently between chambers. Sets of parallel tracks may be provided within each chamber between which stacks of timber may be transferred to allow independent movement of timber stacks. It will be appreciated that a wide range of material handling systems could be employed to move the stacks between the chambers and that the invention is in no way limited to the use of carts on rails.

Id. at 7:36-46 (emphasis added).

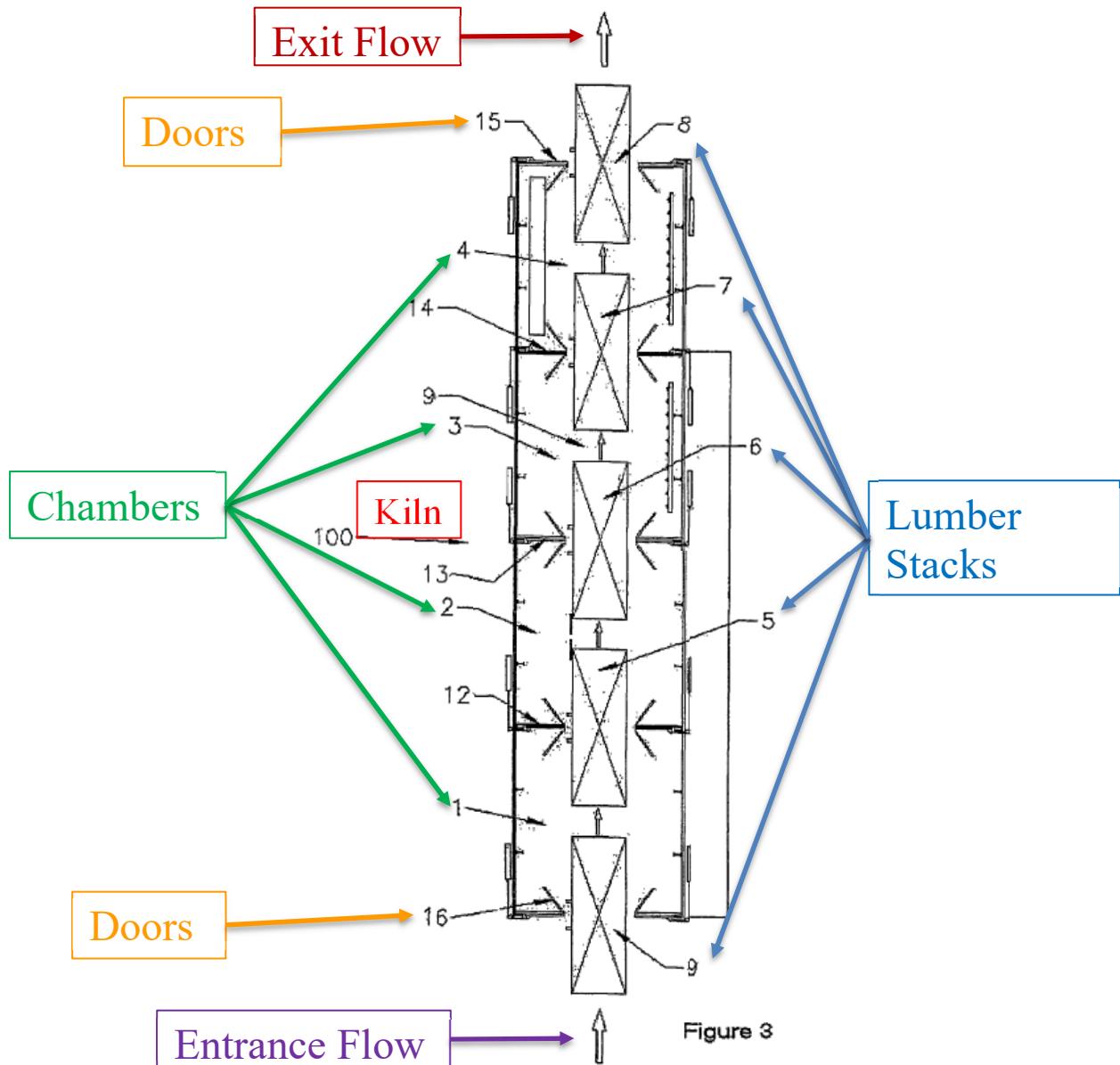
Studd discloses that after lumber stacks make a complete continuous pass through the kiln, they become fully processed stacks **10** which exit the kiln on the end of the kiln opposite the entrance. *See, e.g., id.* at 4:8-12 ("Each chamber **1**, **2**, **3** and **4** contains a stack of timber **5**, **6**, **7** and **8** respectively, each at a different stage of the drying process. Additionally a green stack **9** awaits entry to the kiln and a fully processed stack **10** awaits dispatch from outside the exit of the kiln.").

The arrangement as discussed above with reference to Studd is depicted in color-annotated Figure 1 reproduced below:



Studd discloses that its kiln contains any number of insulating members—referred to in Studd as “doors,” “curtains,” or “partitions”—which can be used at both ends of the kiln to enclose the kiln’s structure as well as internally between the various chambers. *See, e.g., id.* at 1:51-52 (referencing “curtains” and “partitions” between chambers); 4:3-6 (referencing doors **12** to **14**); 4:55-61 (referencing doors **12** to **16**); 6:59 to 7:3 (describing movement of stacks through the various doors **12** to **16** including self opening doors **16** into chamber **1** at the entrance of the kiln and self opening doors **15** at the exit of the kiln as shown in Figure 3 as well as doors **12** to **14** between the various chambers of the kiln).

Studd’s arrangement is further demonstrated color-annotated Figure 3 reproduced below:



Studd further discloses that the kiln allows for the exchange of heat or other desired airflow conditions or energy transfers between the various chambers of the kiln based on use of fans and ducts. *Id.* at 2:38-43 (describing that “energy transfer means may transfer the heating medium (eg steam and air) between chambers or may extract energy from one chamber and supply it to another chamber by use of a heat pump. The energy transfer means may consist of ducts between chambers with the heating medium driven through the ducts by fans”); 5:41-55 (describing “energy transfer”

means including ducts **49** and **50** with fan **51** driven by PLC **21** to control airflow between the various chambers **1** to **4**); 7:14-22 (describing use of fans **17A**, **17B** and **17C** driven by motors).

C. Cobb

Cobb was filed on January 10, 1938 and issued on June 30, 1942, more than 70 years before the '020 Patent's priority date. As detailed more fully in the claim chart attached as Appendix A, Cobb—*which was not considered* by the Examiner during the examination of the '020 Patent Application—explicitly discloses most, if not all, of the limitations of the Challenged Claims. When combined with the teachings of Studd, each of the Challenged Claims is invalid for obviousness under § 103.

Entitled “Dry kiln and the art of kiln drying,” Cobb discloses that:

In progressive kilns now in use, loads of material to be dried are put progressively into the kiln at intervals, one behind the other, on the same track so that dryer lumber is at the dry end and greener lumber is at the green end. The temperature in the kiln increases from the green end to the dry end and the humidity decreases accordingly. Multiple track charge kilns are also in use, and in these the temperature is gradually raised as the drying period progresses. I preferably employ a new method of drying, consisting of serially charging a full track or row of stock loads periodically into a dryer having a plurality of parallel tracks, and of circulating a common drying atmosphere across the loads, the common atmosphere having substantially the same entering air temperature throughout the entire dryer and throughout the drying period.

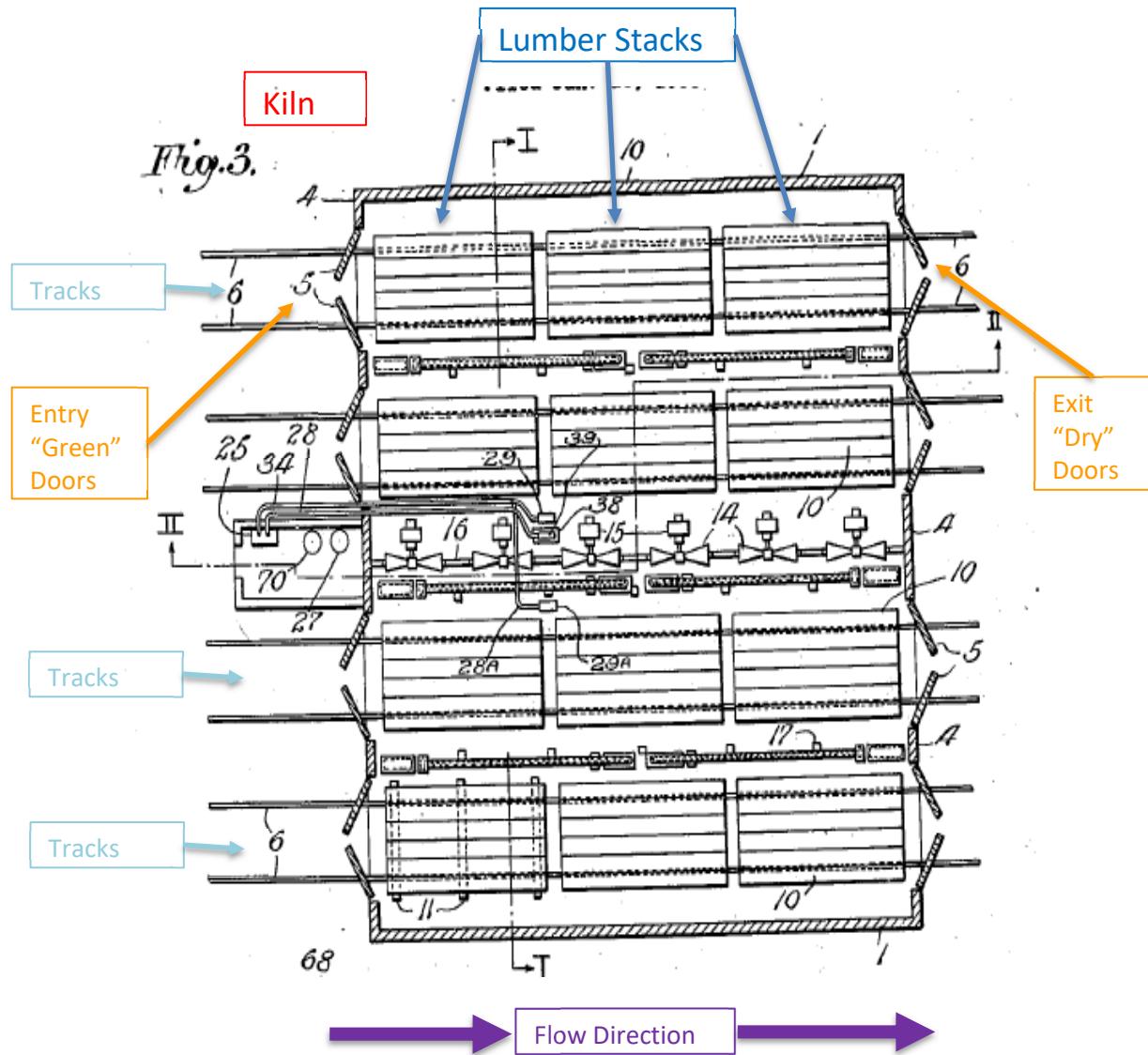
Cobb, 1:18-35.

It is important to note that even as of 1938 when Cobb was filed, it was well known to utilize progressive, multi-track (parallel) kilns where the internal atmospheric conditions of the system was conditioned across the different loads of the kiln. *Id.* In these configurations—which Cobb describes and illustrates—loads of timber would begin at the “green end” and proceed in a

flow direction through the kiln to the “dry end” of the kiln. *Id.* The loads pass long the various tracks which are “are designed to support and carry wheeled trucks b which may be of any usual form [] on which the lumber or materials to be dried is piled endwise with boards parallel to the tracks[.]” *Id.* at 2:32-37.

Cobb also discloses that the kiln has “some means of door 5” at both ends of the kiln and states that the various walls of the kiln “may be of any suitable material and construction and combined in any manner preferred so as to confine within the enclosed chamber the gaseous circulatory medium with the heat and moisture which are supplied to it.” *Id.* at 2:4-19. Inside this kiln configuration which can be partitioned according to the needs of the user, the atmosphere is controlled by fans and other heating and conditioning elements. *Id.* at 2:32-48.

Color-annotated Figure 3 of Cobb reproduced below shows the pertinent structure:



The color-annotated elements above are foundational components of modern-day progressive kilns including those described and elaborated upon in Studd many decades later and then in the '020 Patent filed years thereafter. It would have been obvious to combine the teachings of Studd with Cobb at least because they both describe continuous/progressive lumber drying kilns including multi-path/multi-track kilns where tracks move in parallel from one side of the kiln (the “green” side as they both say) to the opposite end of the kiln (the “dry” side as it is called) along

the same flow path (as opposed to opposite or counter-flow paths in certain prior art—*e.g.*, Pollard '048—differentiated in the '020 Patent).

In fact, Cobb was originally assigned to the Moore Dry Kiln Company, which USNR—the '020 Patent assignee—purchased in 1969 because of its well-known reputation and kiln processes. <https://www.usnr.com/en/content/hist-irvingtonmoore>. As USNR states on its website:

More patents have probably been granted to the Moore Dry Kiln Company for improvements in dry kilns and dry kiln equipment than any other kiln manufacturer. Founder, La Fayette Moore began building kilns in 1868 and the Moore kiln has always been in the forefront. While believing in improvements, the company has never offered any kiln or improvement to the trade that has not proven to be a commercial success.

Id.

D. Motivation To Combine Studd And Cobb

It is presumed that a person of ordinary skill in the art (POSITA) would have known the teachings of Studd and Cobb at the relevant time, as evident by USNR's own website quoted above as emphasizing improved kiln patents like Cobb. MPEP § 2141.II.C. Requestor has identified in Appendix A where and how Studd and Cobb disclose all the limitations of the Challenged Claims. There are no meaningful differences between Studd/Cobb and the Challenged Claims. MPEP § 2141.III (citing *Dann v. Johnston*, 425 U.S. 219, 230 (1976) (“mere existence of differences between the prior art and an invention does not establish the invention’s nonobviousness”).

The '020 Patent purports to have invented “a dual-path *unidirectional* kiln” as an improvement over “counter-flow” or opposite direction kilns. But even putting aside that both Studd and Cobb disclose dual or parallel track kilns by which lumber charges can move in the same direction (which teachings thus by themselves provide motivation to combine Studd and Cobb), a POSITA would have clearly recognized that having same-direction paths in the kiln

would predictably result in being able to, for example, (ii) stack “green” lumber on one end for entry into the kiln and dry lumber on the other end to take away from the kiln, (ii) have one of each type of chamber (*e.g.*, pre-heating, heating, conditioning) across the kiln for lumber charges to flow through in the same direction as opposed to needing pre-heating and conditioning chambers at each end for counter-flow paths of lumber charges, and (iii) have a simpler transport system for moving lumber charges in one direction as opposed to needing a more complex or multiple transport systems to move lumber charges in opposite directions. At minimum, it would have been “obvious to try” to have multiple same-direction paths for a potentially more streamlined kiln to achieve the predictable results of (i), (ii), and/or (iii), which would also lead to lower cost and increased efficiencies. MPEP § 2141.III (discussing various obviousness considerations under *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007)). Indeed, the ’020 Patent acknowledged the aforementioned simplicity and efficiencies to be gained. ’020 Patent, 3:48-51.

Even more, with respect to the ’020 Patent’s description of its unidirectional kiln as providing “better drying efficiency” and “lower costs of use” (’020 Patent, 3:39-42), Studd and Cobb years before recognized heating and cost inefficiencies attendant with earlier, voluminous kilns which did not maximize thermal regulation and control. And accordingly, both Studd and Cobb sought to resolve those inefficiencies and high costs by maintaining constant control of the system and recirculating heat through the kiln to ensure less waste and high lumber quality. For example, Studd taught that:

It will be appreciated by those skilled in the art that by using separate and thermally isolated chambers in this way, the conditions experienced by the timber as it undergoes the drying process can be carefully monitored and controlled, providing a superior and more consistent end product enabling repetitive results over weeks or months of drying operations. This is particularly advantageous in high temperature operation where timber may be rapidly dried in a short time whilst

maintaining timber quality.

It will further be appreciated that the thermal energy requirement of the kiln will be relatively constant and of a relatively lower average level compared to previous batch timber drying kilns. Higher efficiency of the thermal cycle reduces energy demands and thus reduces the cost of operation. Steam conditioning of timber in the final chamber enables a rapid drying schedule to be employed without significant degradation of the timber.

Studd, 8:59 to 9:9.

Similarly, Cobb taught that:

I preferably employ a new method of drying, consisting of serially charging a full track or row of stock loads periodically into a dryer having a plurality of parallel tracks, and of circulating a common drying atmosphere across the loads, the common atmosphere having substantially the same entering air temperature throughout the entire dryer and throughout the drying period. This method reduces steam consumption, reduces the cost of drying lumber such as the common grades which are dried in quantity, reduces handling costs through the dryer, and stabilizes the drying conditions and insures high quality of the kiln dried stock.

Cobb, 1:28-41.

The above control and efficiency advantages in Studd and Cobb associated with having multiple separate chambers were later described in the '020 Patent as benefits of its purported invention. '020 Patent, 7:54-64 ("This may increase the efficiency of pre-heating/cooling and aid temperature regulation in adjacent chambers/subsections by minimizing fluctuations in temperature within those areas. Minimizing temperature fluctuations and reducing the migration of moisture between adjacent subsections may allow the green lumber to be pre-heated/cooled at a selected optimal rate, which may help to reduce or prevent defects from overly rapid drying or cooling of the lumber. Other embodiments may include additional subsections, fewer subsections,

or no subsections.”). Thus again, the advantages described in the ’020 Patent were already known and sought as taught in Studd and Cobb.

To be clear, Requestor has presented evidence in Appendix A that Studd discloses each and every limitation of the Challenged Claims and thus anticipates those claims under pre-AIA 35 U.S.C. § 102. However, in addition, to the extent any limitations of the Challenged Claims are deemed not present in Studd, those claims are obvious in view of the decades-known teachings of Cobb which a POSITA would have been motivated to combine with Studd as discussed above. Cobb provides further illustration of the components explicitly described in the specification of Studd including parallel tracks of lumber charges passing through doors or partitions at the different ends of the kiln. In other words, Cobb is an example of operation of the configurations described in Studd with further illustrations of this multi-track configuration which was well known and described in Studd.

E. Studd In View Of Cobb Presents A Substantial New Question Of Patentability Of The Challenged Claims Under 35 U.S.C. § 103

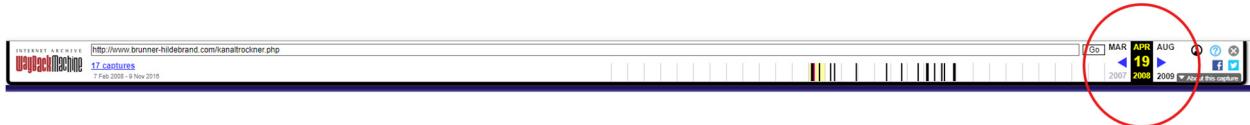
For the reasons above as well as the specific citations referenced in Appendix A hereto, Studd presents a Substantial New Question of Patentability, either alone or in combination with Cobb. For the convenience of the Office, Appendix A includes a claim chart that shows where every limitation of the Challenged Claims of the ’020 Patent is disclosed in Studd and/or Cobb.

F. The Hildebrand Progressive Kiln Reference

The Hildebrand reference is a printed publication on the website of well-known kiln manufacturer Hildebrand-Brunner. As detailed more fully in the claim chart attached as Appendix B, the Hildebrand reference—*which was not considered* by the Examiner during the examination of the ’020 Patent Application—explicitly discloses most, if not all, of the limitations of the Challenged Claims. When combined with the teachings of Studd, all of the Challenged Claims are

invalid for obviousness under § 103. The Hildebrand reference was published on the internet no later than April 19, 2008, several years prior to the priority date of the '020 Patent and qualifies as a “printed publication” under MPEP § 2128(II)(A).

“A reference is proven to be a ‘printed publication’ ‘upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.’” MPEP § 2128 (citing *In re Wyer*, 655 F.2d 221 (CCPA 1981) (quoting *I.C.E. Corp. v. Armco Steel Corp.*, 250 F. Supp. 738, 743 (SDNY 1966))). This applies to the Hildebrand reference which was published on Hildebrand-Brunner’s public website no later than April 19, 2008 as shown at <https://web.archive.org/web/20080419092216/http://www.brunner-hildebrand.com/kanaltrockner.php>:

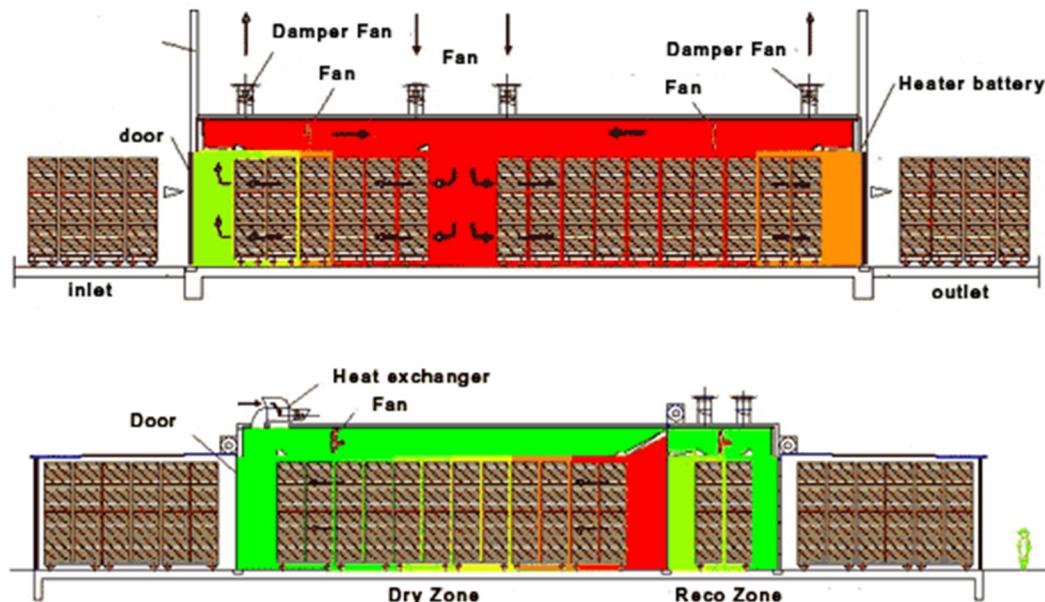


The Hildebrand reference discloses numerous physical “Hildebrand Progressive Kilns” which had been in existence since as early as 1978 as depicted below. *Id.*



The Hildebrand reference specifically illustrates kilns having numerous parallel tracks of lumber wherein the lumber charges on the tracks enter through a door at the “inlet” end of the kiln

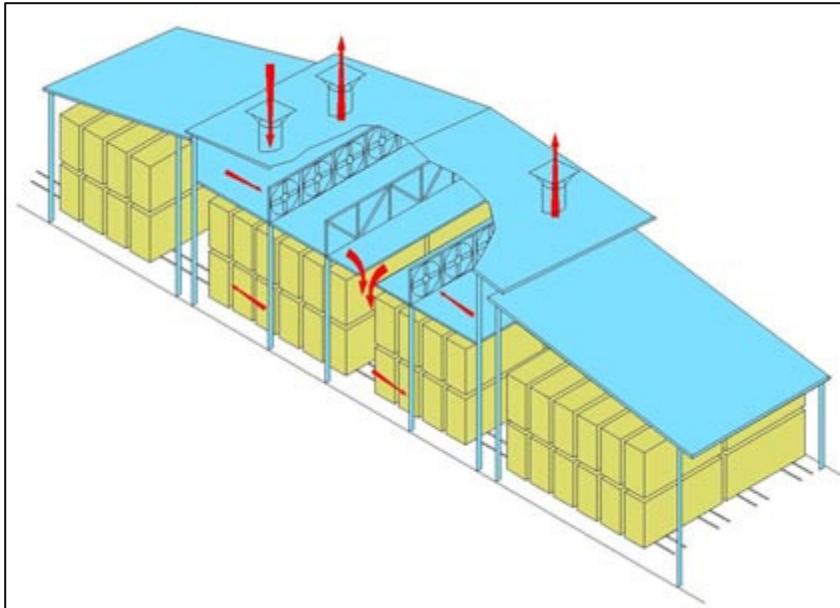
and pass-through various zones including a “pre heating” zone, “dry zone,” and/or “reco [reconditioning] zone.” *Id.* This is further depicted in the illustrations below where the various zones are illustrated using different colors and/or names and wherein the zones may include partitions between them to control the “climate zones”:



Id. The Hildebrand reference describes that the lumber charges are moved via “a clever automatic transportation system . . . for transportation cross to the timbermovement through the kiln (with forklift or kiln trolley).” *Id.*

An exploded version¹ of this kiln configuration with multiple parallel tracks carrying multiple different lumber charges in the same direction through the kiln with different air circulation configurations using ducts and fans is depicted in the Hildebrand reference as shown below:

¹ Clearly the Hildebrand reference discloses use of kilns with walls which have been removed in this image to illustrate the internal flow of lumber charges along the tracks which would not be visible if the walls were depicted.



Id.

The Hildebrand reference also discloses use of an “‘artificial intelligence’ (Computer control system B9840-CH)” allowing for control of many features including “the time intervals for the advance[ment] in the kiln [which] are adapted – in connection with the control of the moisture contents of the timber – to the progress of the dry[.]” *Id.*

G. Motivation To Combine Studd And Hildebrand

In such manner, the Hildebrand reference, which is presumed to have been known by a POSITA, discloses at least all of the primary features of the Challenged Claims, namely the flow of lumber charges in a single direction through the kiln on parallel tracks with air circulation systems and a computerized control system (which is also disclosed and taught by Studd). At least the same obviousness rationale discussed above in Section V.D to combine Studd and Cobb is applicable to why a POSITA would have been motivated to combine Studd and the Hildebrand reference. Moreover, Hildebrand-Brunner is a highly regarded kiln manufacturer and a POSITA would have—in considering “continuous” or “progressive” kilns like those in Studd—been motivated to combine the teachings of the Hildebrand reference (which kilns had been in existence

for 40 years before the priority date of the '020 Patent) with the teachings of Studd which also depicted multi-zone, multi-track continuous lumber drying kilns wherein lumber charges move from a “green end” (the “inlet” in the Hildebrand reference) to the “dry end” (or “outlet” in the Hildebrand reference) in coordination with a computerized control system to adapt the flow of lumber based on measured conditions including moisture content of the lumber.

H. Studd In View Of Hildebrand Presents A Substantial New Question Of Patentability Of The Challenged Claims Under 35 U.S.C. § 103

For the reasons above as well as the specific citations referenced in Appendix B hereto, Studd and the Hildebrand reference present a Substantial New Question of Patentability. For the convenience of the Office, Appendix B includes a claim chart that shows where every limitation of the Challenged Claims of the '020 Patent is disclosed in Studd and/or the Hildebrand reference.

VI. CONCLUSION

For the foregoing reasons and the detailed explanations and reasons provided in the accompanying claim charts at Appendices A and B, Substantial New Questions of Patentability exist and should be sustained in the rejection of claims 1-15 of the '020 Patent as not satisfying the requirements of Title 35 U.S.C. §101 et seq. A Notice to this effect is requested.

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